

Claims

1. A network termination unit for supporting communication between a switching system and one or several terminals connected with the network termination unit through associated subscriber lines, wherein the network termination unit comprising: a DSL transceiver unit, in particular a SHDSL transceiver unit, for transferring in both directions over a subscriber line connecting the network termination unit with the switching system, in particular over one or several twisted pair lines, broadband packet traffic as well as a number of synchronous channels, the DSL transceiver unit providing a pool of ISDN-B and ISDN-D channels based on such synchronous channels, where the number of ISDN-B channels of the pool range from 1 through n and the number of ISDN-D channels of the pool range from 1 through m; and at least one analog subscriber line termination unit to be connected with a PSTN terminal through an analog subscriber line, the analog subscriber line termination unit comprising a protocol converter for converting between analog loop signaling applied on the analog subscriber line and messages transported over one of the ISDN-D channels of the pool of ISDN channels provided by the DSL transceiver, and the analog subscriber line termination unit comprising a bearer channel connector performing an analog to digital conversion between the analog subscriber line and one of the ISDN-B channels of the pool of ISDN channels provided by the DSL transceiver.
2. The network termination unit according to claim 1, characterized in that the protocol converter converting between a NMDS protocol and the signaling protocol applied on the analog subscriber line.
3. The network termination unit according to claim 1, characterized in that the network termination unit further comprising a ISDN subscriber line termination unit to be connected with at least one ISDN terminal through at least one ISDN

subscriber line, the ISDN subscriber line termination unit comprising a connector for connecting the ISDN subscriber line with an ISDN channel of the pool of ISDN channels provided by the DSL transceiver.

4. A network termination unit according to claim 1, characterized in that the network termination unit further comprising a control unit for dynamically allocating ISDN-B channels of the pool of ISDN channels to analog subscriber line termination units.
5. The network termination unit according to claim 1, characterized in that the network termination unit further comprising a control unit for allocating ISDN-B channels of the pool of ISDN channels to analog subscriber line termination units and to ISDN subscriber lines.
6. The network termination unit according to claim 4, characterized in that the control unit dynamically varying the number of ISDN channels of the pool of ISDN channels by triggering the establishment and/or release of synchronous channels provided by the DSL transceiver unit.
7. The network termination unit according to claim 1, characterized in that the network termination unit is a universal network termination unit further comprising a PSTN interface served by at least two analog subscriber line termination units, an ISDN interface served by at least one ISDN line termination unit, and at least one broadband access interface for exchanging broadband packet traffic served by the DSL transceiver unit.
8. A subscriber line board of a switching system for supporting communication between the switching system and one or several terminals connected with the subscriber line board through associated subscriber lines, characterized in

that the subscriber line board comprising: a number of DSL transceiver units, in particular SHDSL transceiver units, for transferring in both directions over an associated subscriber line, in particular over one or several twisted pair lines, broadband packet traffic as well as a number of synchronous channels, the DSL transceiver unit providing a pool of ISDN-B and ISDN-D channels based on such synchronous channels, where the numbers of ISDN-B channels of the pool range from 1 through n and the number of ISDN-D channels of the pool range from 1 through m; and a broadband interface unit connected with the number of DSL transceiver units for handling the broadband packet traffic exchanged with terminals to be connected with subscriber lines through a network termination unit comprising an DSL transceiver unit; and a narrowband interface unit connected with the DSL transceiver unit for handling data exchanged over the synchronous channels, the narrowband interface unit comprising a protocol converter for converting between the internal protocol of the switching system and signaling messages representing analog loop signaling, the signaling messages are transported over an ISDN-D channel provided by the DSL transceiver unit.

9. The subscriber line board according to claim 8, characterized in that the subscriber line board is a universal subscriber line board further comprising a number of ISDN connection units and a number of PSTN connection units, and a common subscriber line connection unit for variably connecting the subscriber lines with DSL transceiver units, ISDN connection units and PSTN connection units.
10. A method for supporting communication between a switching system and a PSTN terminal connected with a network termination unit through an analog subscriber line, characterized in that the method comprising the steps of: transferring in both directions over a subscriber line between the network termination unit and a subscriber line board of the switching system, in particular

over one or several twisted pair lines, broadband packet traffic as well as a number of synchronous channels;
providing at least one ISDN-B channel and one ISDN-D channel based on such synchronous channels;
converting between analog loop signaling applied on the analog subscriber line and digital signaling messages transported over the ISDN-D channel; and
performing an analog to digital conversion between the analog subscriber line and the ISDN-B channel.